AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-17. (Canceled)

18. (Currently Amended) A system for measuring an optical characteristic of an optically transmissive object, comprising:

a projecting optical system ~~which projects~~ adapted to project light through an optically transmissive object;

a correction system adapted to at least partially compensate a light beam ~~that has been~~ projected through the optically transmissive object for at least one optical property of the optically transmissive object;

an imaging system adapted to collect the light that has been projected through the optically transmissive object; ~~and~~

a wavefront sensor adapted to receive the light collected by the imaging system and to sense a wavefront of the received light; and

a test structure located between the projecting optical system and the wavefront sensor, the test structure being adapted to receive the optically transmissive object.

19. (Currently Amended) The system of claim 18, wherein the optically transmissive object is a lens and the optical property that the correction system compensates for is a focal power of the lens.

20. (Original) The system of claim 18, further comprising means for adjusting the compensation applied to the light beam by the correction system.

21. (Original) The system of claim 18, wherein the wavefront sensor is a Shack- Hartmann wavefront sensor.

22. (Original) The system of claim 18, further comprising a dynamic-range-limiting aperture adapted to insure that the wavefront sensor only sees light within a dynamic range of the system.

23. (Original) The system of claim 18, wherein the correction system includes at least one variable focal length lens.

24. (Original) The system for measuring errors of claim 23, wherein the correction system includes a processor controlling the variable focal length lens.

25. (Original) The system of claim 18, wherein the correction system comprises a telescope having two lenses, at least one of said lenses being movable.

26. (Original) The system of claim 25, further comprising a processor adapted to move said movable lens to a plurality of positions and to stitch together the sensed wavefronts of the light received by the wavefront sensor at each of the positions.

27. (Currently Amended) The system of claim 25, ~~further comprising~~ further comprising a dynamic-range-limiting aperture disposed in an optical path between the two lenses and being adapted to insure that the wavefront sensor only sees light within a dynamic range of the system.

28. (Original) The system of claim 27, further comprising a processor adapted to move said movable lens to a plurality of positions and to stitch together the sensed wavefronts of the light received by the wavefront sensor at each of the positions.

29. (Currently Amended) A method of measuring an optical quality of an optically transmissive object, comprising:

(a) projecting a light beam through an optically transmissive object from a first side of the optically transmissive object;

(b) at least partially compensating the light beam ~~that has been projected through the object~~ for at least one optical property of the optically transmissive object;

(c) collecting the light beam ~~that has been projected through the~~ at a second side of the optically transmissive object opposite the first side, and providing the collected light to a wavefront sensor; and

(d) sensing at the wavefront sensor a wavefront of the collected light.

30. (Currently Amended) The method of claim 29, wherein the optically transmissive object is a lens and wherein at least partially compensating the light beam ~~that has been projected through the object~~ for at least one optical property of the optically transmissive object includes compensating for a focal power of the lens.

31. (Original) The method of claim 30, where the method measures the focal power of the lens.

32. (Currently Amended) The method of claim 29, further comprising:

(e) changing a compensation applied to the light beam;

(f) repeating steps (b) through (e) to obtain N sensed wavefronts; and

(f) stitching together the N sensed wavefronts to map the optically transmissive object.

33. (Currently Amended) The method of claim 29, further comprising passing through a dynamic-range-limiting aperture the light beam that has been projected through the optically transmissive object, the dynamic-range-limiting aperture being adapted to insure that the wavefront sensor only sees light within a dynamic range of the wavefront sensor.

34. (Original) The method of claim 29, wherein compensating the light beam comprises passing the light beam through a telescope having two lenses, at least one of said lenses being movable.

35. (Original) The method of claim 34, further comprising:

(e) moving said movable lens to a plurality of positions; and

(f) stitching together the sensed wavefronts of the light received by the wavefront sensor at each of the positions.

36. (Currently Amended) The method of claim 34, further comprising ~~further comprising further comprising~~ passing through a dynamic-range-limiting aperture the light beam that has been projected through the optically transmissive object, the dynamic-range-limiting aperture being disposed in an optical path between the two lenses and being adapted to insure that the wavefront sensor only sees light within a dynamic range of the wavefront sensor.

37. (Original) The method of claim 36, further comprising:

(e) moving said movable lens to a plurality of positions; and

(f) stitching together the sensed wavefronts of the light received by the wavefront sensor at each of the positions.

38-41. (Canceled)

42. (Currently Amended) A method of measuring an optically transmissive object, comprising:

(a) projecting a light beam through at least a portion of an optically transmissive object;

(b) collecting light passed through the portion of the optically transmissive object;

(c) sensing at a wavefront sensor a wavefront of the collected light passed through the portion of the optically transmissive object;

(d) repeating steps (a) through (c) for a plurality of different portions of the optically transmissive object that together span a target area of the optically transmissive object; and

(e) stitching together the sensed wavefronts to produce a complete measurement of the target area of the optically transmissive object.

43. (Currently Amended) The method of claim 42, further comprising passing through a dynamic-range-limiting aperture the light passed through the portion of the optically transmissive object, the dynamic-range-limiting aperture being adapted to insure that the wavefront sensor only sees light within a dynamic range of the wavefront sensor.

44. (Currently Amended) The method of claim 42, wherein collecting light passed through the portion of the optically transmissive object comprises passing through a telescope having two lenses the light passed through the portion of the optically transmissive object, at least one of said lenses being movable, and wherein repeating steps (a) through (c) for a plurality of different portions of the surface of the optically transmissive object comprises moving the movable lens to a plurality of different positions.

45. (Currently Amended) The method of claim 44, further comprising passing through a dynamic-range-limiting aperture the light passed through the portion of the optically transmissive object, the a dynamic-range-limiting aperture being adapted to insure that the wavefront sensor only sees light within a dynamic range of the wavefront sensor.

46. (Canceled)

47. (Currently Amended) A method of measuring an optically transmissive object, comprising:

(a) locating a light source a first distance from an optically transmissive object;

(b) projecting a light beam from the light source through the optically transmissive object;

(c) collecting light projected through the optically transmissive object;

(d) sensing a wavefront comprising a difference between a wavefront of the collected light and a reference wavefront;

(e) changing the distance between the light source and the optically transmissive object;

(f) repeating steps (b) through (e) to produce N sensed wavefronts; and

(g) stitching together the N sensed wavefronts to produce a complete measurement of the target area of the surface of the optically transmissive object.

Claims 48-59. (Canceled)